ABSTRACT OF THE DISCLOSURE

One disclosed embodiment is a method based on an iteratively employed Bayesian-probability-based pixel classification, used to refine an initial feature mask that specifies those pixels in a region of interest, including and surrounding a feature in the scanned image of a microarray, that together compose a pixel-based image of the feature within the region of interest. In a described embodiment, a feature mask is prepared using only the pixel-based intensity data for a region of interest, a putative position and size of the feature within the region of interest, and mathematical models of the probability distribution of background-pixel and feature-pixel signal noise and mathematical models of the probabilities of finding feature pixels and background pixels at various distances from the putative feature position. In a described embodiment, preparation of a feature mask allows a feature-extraction system to display feature sizes and locations to a user prior to undertaking the computationally intensive and time-consuming task of feature-signal extraction from the pixel-based intensity data obtained by scanning a microarray.